E&MJ METAL AND MINERAL MARKETS

Weekly Market Information Issued by the Publishers of Engineering and Mining Journal

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Lead Consumers Ask for Suspension of Import Duty

The Lead Consumers Industry Advisory Committee recommended at a meeting Jan. 10 with the National Production Authority that the Director of the Office of Defense Mobilization immediately request Congress to suspend the duty on imported lead.

Committee members said that a recent "softening" in the world market for lead has made it possible to import the metal under more favorable conditions than those which previously existed. The committee indicated that a suspension of the import duty would increase the flow of lead into the United States and consequently provide a better supply.

The import price of lead was reported at the meeting to be 19c. per pound, plus duty for the buyer's account.

Following a discussion of the supply and demand situation for lead, the committee recommended that imported lead and domestic lead be lumped together for allocation by NPA in February 1952. Continuation of this practice thereafter would depend upon the availability of lead from foreign sources.

Some committee members also recommended that NPA review the historical pattern of consumption by both large and small lead consumers in order to eliminate any inequities found to have arisen since the metal was put under allocation. Some companies in the industry are finding it difficult to meet their defense orders, it was reported, and it was felt that another look at the use pattern might be helpful to them.

NPA officials were asked to see what can be done to expedite distribution of lead tonnages from the Government stockpile, if this becomes necessary. Some lead has been "released" from the stockpile for use on defense production. Industry representatives said some companies were down to 50% of their normal lead supplies.

Officials informed the committee, that because of changed conditions in the world lead market, contracts for February delivery of foreign lead should be entered into by those who wish, provided that the amount contracted for does not exceed their January allocations. They also indicated that if sufficient lead becomes available, NPA will consider increasing allocations.

U.S. Buys Malayan Tin at $1.18–Foreign Lead Sales Pick Up–Bismuth Control Off

This country has agreed to purchase 20,000 tons of tin from Malaya in the current year on the basis of $1.18 per pound. The deal is part of an agreement concluded by this country and Great Britain at the recent meeting of Truman and Churchill. It points to a higher market here for tin. Copper remains extremely tight, but the supply outlook for lead and zinc is improving. Bismuth was decontrolled by NPA on all but the matter of filing of reports. There was hope that restrictions on other metals in ample supply will also come off or be amended as soon as conditions permit.

Copper

Allocation of copper for February will begin shortly. The available supply is expected to be smaller than in recent months. Stockpile copper released during the emergency is no longer available. Sales of copper booked so far in the domestic market for January shipment to fabricators total around 76,000 tons. The domestic market continues strong at the ceiling of 24½c.

Foreign buyers of premium-priced copper are no longer reaching after the metal at any price. There were offerings at 40c. per pound. The producers' market continued at 27½c.

The Defense Materials Procurement Agency has agreed to paying a premium of 5 to 6c. per pound to Calumet & Hecla on about 1,000,000 lb. of copper a month to be taken from four of its high-cost mines over the next 12 to 17 months.

The December statistics of Copper Institute placed deliveries to fabricators at 119,577 tons, against 123,646 tons in November. Stockpile metal was included in December's deliveries.

Lead

Sales of foreign lead in this market were in fair volume during the last week. Mexican lead sold here on the basis of 19c. plus the duty, nearby shipment. Yugoslavian lead sold for delivery over a longer period on the basis of the *E&MJ* average. Those consumers who are in a position to absorb the duty are eager to add to their supply. However, in most instances they limited their purchases to nearby metal.

Washington observers were optimistic over prospects for early action by Congress to suspend the import duty on lead. NPA officials have indicated that increased imports would probably result in stepping up allocations.

The domestic market was maintained at 19c., New York. Sales totaled 2,450 tons.

Mexican lead was quotable at 19c. to 19½c. per pound, f.a.s. Gulf ports.

Zinc

Senator Dirksen (Ill.) has asked Congress to limit the proposed suspension of the zinc duty to ores and concentrates. A bill passed by the House last year called for the suspension of the duty, with proper safeguards, on slab zinc as well as zinc contained in concentrates.

With automobile production scheduled to decline in the second quarter, producers of Special High Grade, the die-casting grade, are a little concerned over the supply outlook.

Quotations in the domestic market were unchanged on the basis of 19½c. for Prime Western, East St. Louis. Mexican zinc, common grade, was more or less nominal at 24c. to 26c. per lb., f.a.s. Gulf ports.

Bismuth

Effective Jan. 15, NPA removed all controls on bismuth except the requirement that reports on sales, use and inventory be made on a monthly basis.

Tin

The recent Truman-Churchill agreement involves a purchasing arrangement under which this country will obtain Malayan tin in Singapore on the basis of $1.18 per pound. The price is subject to adjustments in the event that the United States buys tin at a higher price elsewhere. The quantity involved in the deal totals around 20,000 tons of metal. An official announcement is expected shortly.

The RFC continued to quote $1.03 per lb. Sales by the agency last week

(Continued on page 9)

Kennecott Copper Corporation
Kennecott Sales Corporation

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E&MJ
METAL AND MINERAL
MARKETS

Weekly Market Information
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E&MJ Metal and Mineral Markets is published each Thursday with a daily quotation for copper, lead, zinc, tin, and silver. Commodities that change price infrequently are quoted at weekly or monthly intervals, according to their importance. Official weekly and calendar weekly averages, also monthly averages, are published for copper, lead, zinc, tin, and silver in the United States market.

View 1952 as Peak Year in Production for Defense

Defense officials look for a sharp upturn in production of military items in 1952 and a growing shortage in materials available for civilian goods.

Administrator Manly Fleischmann, Defense Production Administration, in a review of progress made in 1951 and prospects for 1952, points out that production of military goods in the current year is expected to double the 1951 rate, approaching about $50-billion a year.

The bulk of the industrial expansion program will be pushed to completion in 1952, and production of actual military items – rather than machinery to make them – will distinguish the new year.

Increased uses of scarce materials for military production will intensify shortages of materials for civilian goods.

"Standing today at approximately the half-way mark, we can expect that by the Summer of 1953 – three years after the invasion of South Korea – we shall have achieved the build-up of military strength in being, plus the additional productive capacity to support an all-out mobilization, with which the nation hopes to insure our ultimate goal of national security," Mr. Fleischmann said.

Airplane production is expected to increase over 1951 levels by about 115%. Electronics manufacture is due to rise approximately 268%. The machine tool industry will be operating at an $800-million rate – more than double the $305-million worth shipped in 1951.

The 1952 peak year in our defense production, according to estimates, will place us well beyond the halfway mark in the arms program. In doing so, it will make the defense effort a far more realistic part of the life of the average citizen than it was in 1951. As additional tons of steel, copper, aluminum, sulphur, tin, tungsten and nickel flow into military end-items, less and less of these strategic materials will be available for automobiles, refrigerators and other civilian items.

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New Uses for Germanium Point to Enlarged Outlet

Expanding needs for germanium in the electronics industry point to a gain in requirements of approximately five times present supply over the next five years.

Production can be increased, authorities believe, providing a reasonably stable market exists for the metal. Current production statistics are not available. It is being recovered in this country from the germanium-rich zinc ores of the Tri-State district of Missouri-Oklahoma-Kansas, which contain from 0.01 to 0.1% Ge. The prevailing nominal quotation for germanium metal is $180 per pound.

The electronics industry at present is concerned with two important applications, the "transistor," developed by the Bell Laboratories for use in long-distance telephone circuits and rectifiers. The last-named use is expected to provide a substantial market for germanium.

The "transistor" is smaller than a pea and performs most of the functions of a vacuum tube. It operates on a minute amount of current and requires no warm-up.

Germanium rectifiers will be used extensively in the electronics industry, engineers predict.

In reviewing trends in metals at a meeting of the American Institute of Chemists, held sometime ago, Alexander Stewart, of the National Lead Co. said:

"Germanium, though scarcer than uranium, has continued to find new industrial uses. It is produced chiefly from metallurgical residues. Pure germanium possesses several unique electrical properties, and these have been exploited in the electronics field. Its behavior as a semi-conductor of electricity has made it useful in certain types of high resistance resistors. The rectifying characteristics of germanium have been recognized and were probably first practically utilized in radar micro rectification. The subsequent development of the germanium diode, an extraordinarily small and compact device, has permitted the construction of equally compact radios of the wrist watch type, having no glass tubes in them. Germanium is also used in television screens because of its photo-electrical sensitivity."

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Editorship Changes Hands

Evan Just has resigned as editor of *Engineering and Mining Journal* and editorial director of *E&MJ Metal and Mineral Markets*. R. H. Ramsey, executive editor, has succeeded Mr. Just.

Mr. Ramsey graduated in mining and engineering at the University of Wisconsin. He did graduate work for masters' degrees in mining and in metallurgical engineering there and at the Montana School of Mines. He joined *E&MJ* in 1942.

Mr. Just has been editor of *E&MJ* since July, 1944. He is leaving that post to become vice president of Cyprus Mines Corp. in charge of expanding that company's exploration and development activities in foreign and domestic fields.

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American Metal Scholarship

The American Metal Co. has established a scholarship at Lehigh University to honor Harvey Miller Burkey, its chief metallurgist, who retired on Dec. 31, 1951.

During more than 45 years of service, Mr. Burkey was the chief source of metallurgical knowledge and made important contributions to all technical developments in the company.

The scholarship will be granted by the University to qualified students seeking a Bachelor's degree in mining, metallurgy and chemical engineering and is intended to provide both tuition and basic expenses.

Last year, the company established scholarships at New York University and Rutgers University, open to employees of the company at New York and Carteret, N. J., for evening study leading to a degree or a certificate in Business Administration. These scholarships honor William H. Brady, former treasurer.

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Fowler Heads NPA

Secretary of Commerce Charles Sawyer announced last week the appointment of Henry H. Fowler as Administrator of the National Production Authority. Mr. Fowler, who has been serving as Deputy Administrator of NPA since Sept. 10, 1951, succeeds Manly Fleischmann, who resigned to devote his full attention to his post as Administrator of the Defense Production Administration.

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Miscellaneous Metals

Quotations cover wholesale lots, f.o.b. New York, unless otherwise specified.

ALUMINUM—Per lb., base price, f.o.b. shipping point: 30 lb. ingot, 99% plus, 19c., in pigs, 18c.

Base prices on aluminum ingot of higher purity: 99.75%, 19½c.; 99.8% ,20c.; 99.85%, 21c.; 99.9%, 22c.

ANTIMONY — Per lb., 99½% grade:

	Domestic Boxed (a) New York	Domestic Bulk (b) Laredo
Jan. 10	53.350	50.000
Jan. 11	53.350	50.000
Jan. 12	53.350	50.000
Jan. 14	53.350	50.000
Jan. 15	53.350	50.000
Jan. 16	53.350	50.000

(a) Boxed (224 lb.), 10,000 lb. or more but less than carload. (b) In bulk, carload, f.o.b. Laredo; boxed one-half cent extra.

BISMUTH—Per lb., in ton lots, $2.25.

CADMIUM — Per lb., wholesale quantities delivered:

	Commercial Sticks	Special (a) Shapes
Jan. 10	$2.55	$2.80
Jan. 11	2.55	2.80
Jan. 12	2.55	2.80
Jan. 14	2.55	2.80
Jan. 15	2.55	2.80
Jan. 16	2.55	2.80

(a) Special shapes to platers

CALCIUM — Per lb., in ton lots, cast in slabs and small pieces, $2.05.

CHROMIUM — Per lb., 97 percent grade, spot, $1.12; contract $1.07 per lb. (Usually sold as chrome-metal.)

COBALT — Per lb., rondelles or granules, in 500 to 600 lb. containers, $2.40; in 100 lb. containers, $2.42; less than 100 lb. containers, $2.47. Prices f.o.b. N. Y. or Niagara Falls, freight collect. Effective Oct. 1, 1951.

COLUMBIUM — No quotation. Pricing under prevailing conditions "subject to special terms."

GERMANIUM—Per lb. $180.

INDIUM — Per oz. troy, 99.9 percent pure, $2.25.

LITHIUM — Per lb. 98%, $9.85@$11, depending on quantity.

MAGNESIUM — Per lb., f.o.b. producer's plant, ingots (4x8 in.), 99.8 percent, carload lots, 24½c.; 100 lb. or more, l.c.l., 26½c. Extruded sticks, carload lots, 32½c.; 100 lb. or more, l.c.l. 34½c.

MANGANESE — Per lb. Minimum 96 percent Mn, maximum 2 percent iron, carload lots, bulk, 29c.; packed in cases, 35½c.

Electrolytic manganese 99.9 percent Mn, 28c., carload lots.

MOLYBDENUM — Per lb., 99 percent $3.00.

NICKEL — Per lb., electrolytic cathodes, f.o.b. Port Colborne, Ont., contract price, 56½c. U.S. import duty included. Nickel oxide sinter, 52½c. per lb. of nickel content, f.o.b. Copper Cliff.

OSMIUM — Per oz., $200, nominal.

PALLADIUM — Per oz. troy, $24.

PLATINUM — Per oz. troy, $90 on wholesale lots; $93 on sales to consumers.

QUICKSILVER — Per flask of 76 lb., $208@$211.

RADIUM — Per mg. radium content, $20@$25, as to quantity.

RHODIUM — Per oz. troy, $125.

RUTHENIUM—Per oz. troy, $90@$93.

SELENIUM — Per lb. $3.00@$3.50 for black, powdered, 99.5 percent pure.

SILICON — Per lb., minimum, 97 percent Si, maximum 1 percent Fe, crushed, carload lots, in bulk, 20c.

SODIUM — Per lb., carload lots, in drums, 16½c.; less than carload lots, 17c.

TANTALUM — Per kilo, base price, $160.60 for rod; sheet, $143. Discounts on volume business.

TELLURIUM — Per lb., $1.75.

THALLIUM — Per lb., $12.50.

TITANIUM — Per lb., 96@98%, $5.

TUNGSTEN — Per lb., 98.8 percent minimum, 1,000 lb. lots, $6.00. Hydrogen reduced tungsten, 99.9 percent plus $7.75. Ceiling prices effective May 7.

ZIRCONIUM — Per lb., powder, $7 to $8, according to quantity.

Metallic Ores

Prices in tons of 2,000 lbs., or "units" of 20 lb., unless otherwise stated.

ANTIMONY ORE — Per unit of antimony contained, 50 to 55 percent, $5.25@$5.50; 58 to 60 percent $5.50@$5.75; 60 to 65 percent, $6.75@$7.00.

BERYLLIUM ORE — Per unit of BeO contained 10 to 12% f.o.b. mine, Colorado, nominal. North Carolina, $34@$37

Imported ore, basis 10% BeO, $34@$36.50 per unit, c.i.f. U.S. ports.

CHROME ORE — Per long ton, dry basis, subject to penalties if guarantees are not met, f.o.b. cars New York, Philadelphia, Baltimore, etc.

Indian and Rhodesian:
48% Cr_2O_3, 3 to 1 ratio, lump ..... $43.00@$45.00
48% Cr_2O_3, 2.8 to 1 ratio ..... $40.00@$42.00
48% Cr_2O_3, no ratio ..... $31.00@$32.00
South African (Transvaal):
48% Cr_2O_3, no ratio ..... $34.00@$35.00
44% Cr_2O_3, no ratio ..... $27.00@$28.00
Turkish:
48% Cr_2O_3, 3 to 1 ratio, lump ..... $53@$54
Brazilian:
44% Cr_2O_3, 2.5 to 1 ratio, lump ... (a) $32.00

(a) Nominal.

COBALT ORE—Per lb. of cobalt contained, $1.35@$1.45, f.o.b. Cobalt, Ont., depending on grade.

IRON ORE — Per long ton, Lower Lake ports. Lake Superior ore:

Mesabi non-bessemer, 51½ percent iron, $8.30. Old Range, non-bessemer, $8.55.

Mesabi, bessemer, 51½ percent iron, $8.45. Old Range, bessemer, $8.70.

Eastern ores, cents per long ton unit, delivered at furnaces: Foundry and basic, 56@62%, 17c.

Swedish, 60@68% (contracts), per unit, 13c. plus, depending on grade, c.i.f. Atlantic ports; nearby business 17c. plus.

Brazilian, 68 to 69% per unit, 32c., c.i.f. Atlantic ports. Nominal.

MANGANESE ORE — The market for metallurgical ore was quiet. Price situation unchanged. Indian ore was maintained at $1.20 to $1.25 per long ton unit of Mn, c.i.f. U.S. ports, duty extra, basis 46 to 48% Mn, nearby positions.

On long-term contracts for ore from various sources the quotations are nominal at 90 to 95c., c.i.f. duty extra.

Chemical grades, per ton, coarse or fine, minimum 80 percent MnO_2, Brazilian or Cuban, carloads, in barrels, $65@$70. Javan or Caucasian, 85 percent minimum, $75@$80. Domestic 70 to 72 percent, $45@$50, f.o.b. mines.

MOLYBDENUM ORE — Per lb. of contained MoS_2, 90% concentrate, 60c., f.o.b. mines.

TANTALUM ORE — Per lb. Ta_2O_5, $2.00@$2.50 for 56@60% concentrate.

TITANIUM ORE — Per gross ton, ilmenite, 56 to 59 percent TiO_2, f.o.b. Atlantic seaboard, $16@$18, nominal.

Rutile, per lb., minimum 94% concentrate, 3½@4½c., nominal.

(Continued on page 6)

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Metallic Ores

(Continued from page 4)

TUNGSTEN ORE – Per short ton unit of WO_3, domestic concentrates of known good analysis, basis 60%: Ceiling price established at $65, effective April 6.

Western high grade scheelite concentrate, $65 per unit, f.o.b. mine.

North Carolina high grade concentrate, $65 per unit, f.o.b. mine.

London quotes 485s. per long ton unit of WO_3, c.i.f. U.K. ports.

VANADIUM ORE–Per lb. V_2O_5 contained, domestic, 31c., f.o.b. mine.

ZIRCON ORE (sand) – Per long ton, c.i.f. Atlantic seaboard, minimum 65 percent ZrO_2, $47@$50.

Metallic Compounds

ARSENIOUS OXIDE (arsenic trioxide), refined, white, minimum 99 percent – Per lb., 6½c., in barrels carload lots delivered.

COBALT OXIDE – Leading interest has announced that the ceramic grade henceforth will contain from 72½ to 73½% Co. This grade is quoted at $1.82 per lb. east of Mississippi, and $1.84½ west of Mississippi, in 350-lb. containers.

COPPER SULPHATE – Per lb., in carload lots, 8.95@9.95c., large or small crystals, f.o.b. N.Y.

Alloys

BERYLLIUM-COPPER – Master alloy, 4 percent beryllium, remainder copper, 5 lb. ingot, $1.56 per pound of alloy; 3 oz. ingot, $2.09.

FERROCHROMIUM – Per lb. of Cr: High carbon (4 to 9%C) 65 to 69% Cr, lump, carloads, delivered Eastern zone, 21½c.; low carbon, 30½c.

FERROCOLUMBIUM – Per lb. of Cb contained, 50@55 percent, $4.90.

FERROMANGANESE–Per gross ton, 78@82 percent, $185, seaboard.

Quotation has been unchanged at $185 per gross ton since it appeared in issue of Dec. 13, 1951.

FERROMOLYBDENUM, Etc.–Per lb. of Mo contained, f.o.b., shipping point: Ferromolybdenum, 55@65 percent Mo $1.32; calcium molybdate (CaO MoO_3), $1.15; molybdic trioxide (MoO_3), bagged, $1.13, canned, $1.14.

FERROPHOSPHORUS–Per gross ton, 18 percent P, $58.50; electrolytic, 24 percent, $75, f.o.b. Alabama and Tennessee.

FERROSILICON–Per lb. of contained Si, Eastern zone: 50% grade, 12.40c.; 75% grade, 15.60c.

FERROTITANIUM–Per lb. of Ti contained, 20 to 25% max. 0.10% carbon, $1.40.

FERROTUNGSTEN – Per lb. of W contained, $75@80 percent W, $5.00. Price ceiling set May 7.

FERROVANADIUM – Per lb. of V contained: Open hearth, $3.00; crucible, $3.10; low-carbon and silicon, $3.20. Contract prices.

SILICOMANGANESE – Per lb. carload lots, f.o.b. shipping point, freight allowed, maximum 1½% carbon, 9.9c.

SPIEGELEISEN – Per gross ton, 19 to 21 percent grade, $75, Palmerton, Pa.

ZIRCONIUM ALLOY – 12 to 15 percent Zr, 39 to 43 percent Si, 7c. per lb., bulk, carload lots; 35 to 40 percent Zr, 47 to 52 percent Si 20.25c. per lb.

Rolled Metals, Etc.

BRASS – Cents per lb. (base prices)

	Sheet	Wire	Rods
Yellow Brass	38.28	38.57	a32.63
Best quality brass ..	39.15	39.44	38.84
Red brass 80%	39.67	39.44	38.84
Red brass 85%	40.14	39.88	39.28
Com'l bronze	41.13	40.84	40.24
Gilding metal	41.63	41.28	40.68

(a) Free cutting

CADMIUM – Per lb. Special shapes, to platers, $2.80.

COPPER – Per lb. Sheets, over 20 in. wide, 41.63c., rolls 20 in. and under, 39.71c.; Wire, bare, carload lots, f.o.b. mills 28.67@30.42c.

LEAD SHEETS – Per lb., full rolled, 140 sq. ft. 24c.

MONEL METAL – Per lb. (base prices) Standard cold-rolled sheet, 60½c.; cold-rolled strip, 63½c. Rods, hot-rolled, 58½c.

NICKEL–Per lb. (base prices) sheets, cold-rolled 77c.; rods, hot-rolled, 73c.

NICKEL SILVER – Per lb., sheets, 10 percent, 49.27c.; 18 percent, 51.91c.; wire and rods, 10 percent, 51.49c.; 15 percent 54.79c.; 18 percent 57.91c.

PHOSPHOR BRONZE–Per lb., sheets 5 percent tin, 60.20c.; wire and rods, 5 percent 60.45c.; 10 percent 67.33c.

ZINC – Per lb., carload lots, f.o.b. mill (base price): Sheet 26½c.; ribbon 25c.; plates 25½@26½., depending on size.

ZINC DIE-CASTING ALLOY–Per lb., carload lots, delivered, 23.65c. to 24.15c., is No. 3 "Zamac" grade.

Refractories

CHROME BRICK – Per ton, f.o.b. shipping point: Chemically bonded $77@$82; burned, $73@$78.

FIRECLAY BRICK – Per M., super quality, $116.60, Missouri, Kentucky, Pennsylvania; high heat quality, $99.60. Ohio, intermediate grade, $88; second quality, $79.20.

MAGNESITE – Brick, per ton f.o.b. works, 9-in. straights, $99@$102.

SILICA BRICK – Per M., Pennsylvania, $94.60; Alabama, $94.60; Illinois and Indiana, $104.50.

Iron, Steel, and Coke

IRON–Per gross ton, Valley furnaces: Bessemer, $53; basic, $52, and No. 2 foundry, $52.50.

STEEL – Per net ton, f.o.b. mill, Pittsburgh, billets and slabs, $56. Bars, per 100 lb., $3.70; plates and structural shapes, $3.65.

COKE–Per ton, Connellsville furnace, $14.50@$15; foundry, $17@$18.

STEEL SCRAP – Per gross ton, delivered Pittsburgh, No. 1 heavy $46.00; No. 2 heavy $44.00, Cleveland, No. 1 heavy $45.00; No. 2 heavy $43.00.

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Equipment for St. Joe Lead

The St. Joseph Lead Co., Monaca, Pa., has placed an order with Research Corporation for the construction and installation of an electrostatic precipitator which will be used to clean the flash roaster gases coming from the roasting of zinc pyrites. The cleaned gas is then used in the manufacture of sulphuric acid.

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Steel Rate at 102.6%

The operating rate of the steel industry for the week beginning Jan. 14 is scheduled at 102.6% of capacity, which compares with 102.1% in the preceding week, the American Iron and Steel Institute reports.

Production for the week is estimated at 2,051,000 tons of steel ingots and castings.

Long-Term Outlook for Zinc Supply Encouraging—Reserves Increasing

In a summary of the zinc situation in a statement on "Facts About Zinc," the American Zinc Institute points out that the outlook under current conditions is for a continuance of the tight supply for the immediate future. However, so far as the long-range view is concerned there are strong indications that supply and requirements can be brought into balance by other means than restricting use.

There is also evidence, the Institute observes, that world supplies and reserves promise a steady flow of zinc from the mines and smelters for many years to come and in sufficient quantities to meet the expanding requirements that are likely to develop because of the unique properties of zinc.

U. S. slab zinc production, primary and secondary, reached an all-time peak of 990,000 tons in 1943, according to the Bureau of Mines. Output then declined to 772,000 tons in 1946. Production in 1951 totaled about 932,000 tons. If sufficient concentrates are made available to U. S. smelters, they could produce more than 1,000,000 tons in 1952.

Slab Zinc Imports

In 1950, imports of slab zinc totaled 156,000 tons. During 1951 the imports totaled around 80,000 tons. Supplies from other countries have been diverted elsewhere because of the higher level of prices abroad.

U. S. smelters and pigment plants have estimated their 1952 requirements of concentrates at approximately 1,100,000 tons of recoverable zinc. Domestic mine production in 1951 will total about 675,000 tons, with some increase indicated for 1952. The remainder must be imported. So long as prices abroad continue to divert zinc concentrates to other countries, it will be difficult to solve the problem of securing sufficient feed material for United States smelters and pigment plants. However, there are indications that world concentrate requirements may approach a balance in 1952 – which, if true, should result in an easing of the position of United States smelters in the latter part of 1952 or in 1953.

Near-Term Outlook

In the immediate future, because of the foreign price situation, it is to be expected that the slab zinc supply in the United States will continue short of current high demands. As time goes on, however, it is reasonable to expect an easier situation. Some expansion of smelting production is in sight, provided the necessary concentrates are obtainable, part of which undoubtedly will flow from the anticipated increase in domestic mine production. On the demand side, while defense requirements are high, the curtailment of construction, automobile production, and other similar restrictions affect the use of zinc and other metals. There also is another factor which was very noticeable in World War II when the shortages of other materials in many industries reduced the production of these industries and hence their requirements of zinc.

Future of Zinc

The evidence grows that the gloomy forebodings of the imminent exhaustion of zinc have been grossly exaggerated. This is particularly true if proper weight is given to the overall world zinc picture which should be the basis for any objective survey and analysis. At a meeting of the Institute of Metals, held in London on October 17, 1951, the following estimated zinc reserve figures were presented:

ESTIMATED ZINC RESERVES
(in metric tons)

Year	Production of Zinc in Ore	Estimated Reserves
1931	1,200,000	27,000,000
1940	2,000,000	43,000,000
1947	1,750,000	63,000,000
1948	1,800,000	70,000,000

Particular attention is directed to the fact that, according to these figures, measured reserves have increased substantially since 1931 in spite of the accelerated rate of depletion reflected in the foregoing ore production column.

Urgent demand, higher price levels, ECA priming abroad, and increased activity in mining at home prompted by the several Government agencies concerned, should begin to show definite results before very long. Technological advances in the science of exploration and development are beginning to be noticeable, both in this country and abroad, and will become more pronounced as time goes on. This also is true of improved operating techniques and practices in mining, milling, and smelting.

These facts support the conclusions not only of experienced and practical mining men but also of important factors among the consumers of zinc who have studied the situation and satisfied themselves that zinc supplies for the foreseeable future will be adequate for their needs.

•

Lithium Carbonate Plant

The American Potash & Chemical Corp. has completed its plant for the production of lithium carbonate, Peter Colefax, president, announced last week. This marks the entry of the company into the refined lithium chemicals field. The plant was rushed to completion to meet the demand for refined lithium chemicals. All of the crude lithium salts recovered from the brine of Searles Lake at the company's plant at Trona, Calif., are now being processed for sale as lithium carbonate.

•

Gerity Magnesium Castings

Gerity Magnesium Corp., subsidiary of Gerity-Michigan Corp., Adrian, Mich., started operations during the last week on the manufacture of magnesium sand castings. This division of Gerity-Michigan will specialize in producing large intricate magnesium castings for both jet and reciprocating aircraft engines. James Gerity, Jr., president, stated that this type of casting is in great demand and that the number of foundries capable of producing it is limited. Peak production capacity will be reached by September, 1952.

U. S. Slab Zinc Supply

(American Zinc Institute)

Production, shipments and stocks of slab zinc as reported by all regularly operating United States primary and secondary smelters during the period 1940 to 1951, inclusive, figures in short tons:

	Production	Shipments				Stock at End
		Domestic	Export (a)	Gov't Acc't	Total	
1940	706,100	674,615	88,165	.....	762,780	17,582
1941	863,955	751,276	106,195	.....	857,471	24,066
1942	929,770	733,918	151,650	.....	885,568	68,268
1943	971,873	831,430	56,208	.....	887,638	173,510
1944	901,332	830,334	6,988	.....	837,322	237,520
1945	799,520	762,925	9,422	5,302	777,649	259,391
1946	759,346	714,292	66,638	62,007	842,937	175,800
1947	848,027	698,281	117,305	140,230	955,816	68,011
1948	850,105	770,396	69,910	57,598	897,904	20,848
1949	870,113	648,285	56,929	91,526	796,740	94,221
1950	910,354	849,276	18,189	128,276	795,691	8,884
1951	931,833	835,920	42,067	40,829	918,816	21,901

(a) Includes zinc exported under drawback regulations.

Molten lead pours into perforated "skillet" which is covered with a sludge of oxidized lead, so that the molten metal will ooze through slowly and form round drops. On emerging, the molten metal is transformed almost instantly into hardening pellets which drop 133 feet to a water tank on a lower floor of the shot tower.

Inset upper right: "Skillet" through which molten lead flows to form shot pellets. Holes range in number from about 1,000 to 3,500, depending on shot size desired.

Hardened lead pellets are taken on conveyors to one of the tower's top floors for automatic grading for perfect roundness over a series of slanted glass-topped tables. Round pellets jump gap, deformed pellets fall into retainer to be remelted.

Lead slugs for .45 caliber ammunition are cut from spools of lead bullet wire. Endless belts deposit them in automatic machines which shape and cover them with copper alloy jackets.

lead an indispensable ingredient of BULLET & SHOT

Lead has always been the ideal metal for the manufacture of bullets and shot because of certain inherent, highly advantageous characteristics: **1** The high density of a lead pellet or bullet gives a very desirable ballistic effect, which is called carrying power; **2** Lead has a low melting point with a proper surface tension that makes possible the easy formation of spherical pellets required for shot; **3** Lead does not alloy readily with or attack the steel in gun barrels; **4** The softness of lead avoids scratching, abrasion, and peening of the gun barrel; **5** The softness and malleability of lead makes it easy to form into bullet cores.

Shot up to 0.23 in. in diameter, nearly ¼ in., is made in shot towers, and is frequently referred to as "chilled" shot. Small amounts of arsenic, up to 1 percent, are added to the lead to increase fluidity and allow it more easily to assume the perfect spherical shape desired, while from 2 to 6 percent antimony is also added to shot for long range loads to increase hardness. The smaller sizes of shot usually contain the higher percentages of arsenic and antimony.

For bullet cores, lead is usually extruded as wire, containing up to 2.5% antimony, which is cut to length and swaged to the approximate shape of the bullet. This core is then inserted into a gilding metal (90 percent copper, 10 percent zinc) jacket. In "ball" cartridges the entire core is lead alloy, but in tracer and incendiary bullets, the lead core is somewhat shorter than the jacket, the remaining space being filled with the tracer or incendiary chemicals.

Today there is no known compound, either natural or synthetic, which has the ballistic properties of lead and which can, at the same time, compete with it on the basis of supply, cost and ease of fabrication. A number of chemical compounds of lead are also important in ammunition. Lead azide is probably most important as a detonator explosive, while lead sulfocyanate, nitrate, peroxide and styphnate may also be employed.

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THE LARGEST PRODUCER OF LEAD IN THE UNITED STATES

(Continued from page 1)

amounted to 1,160 tons, making the total for the month so far 3,689 tons. Production of pig tin at the Texas City smelter has been falling because of the shrinkage in stocks of tin concentrates.

London prices were higher on optimism over the developments here. Standard tin on the London Metal Exchange, first session, per long ton, was quoted daily as follows:

	Standard Tin	
	Spot	3-Months
Jan. 10	£957½	£957½
Jan. 11	£960	£960
Jan. 14	£955	£955
Jan. 15	£962½	£962½
Jan. 16	£969	£968

Quotations on 99% tin (tin content), New York, were nominally as follows: Jan. 10th, $1.02; 11th, $1.02; 12th, $1.02; 14th, $1.02; 15th, $1.02; 16th, $1.02.

Tungsten

The International Materials Conference has temporarily dropped the plan to establish a lower price range on tungsten ore for the long-term period. Though the arrangement announced for the third quarter of 1951, in which the upper limit was fixed at $65 and the lower limit at $55 per short ton unit of WO_3, f.o.b. port of shipment, was not renewed in the fourth quarter, it was pointed out last week that the purchase price in nearly all transactions did not exceed the upper limit.

During the last week some business was noted on the basis of $65 for foreign ore. Domestic consumers are in a position to obtain needed supplies from the Government at $65.

Quicksilver

The market for quicksilver was inactive and prices were unsettled. The spot quotations continued at $208 to $211 per flask, depending on quantity and seller. On nearby metal, the inside figure could have been shaded.

Silver

Demand was moderate. In the absence of any selling pressure, the New York quotation was unchanged all week at 88c. an ounce troy.

London was quiet but unchanged at 77d. an ounce troy.

United States Gold Price

The price paid by the United States Treasury for gold purchased by the mints continued at $35 per troy ounce of fine gold, less ¼ of 1 percent.

Actual payment by the United States Treasury for gold in imported and domestic ore or concentrate is at 99.75 percent of the price quoted by the Treasury, which at present is equal to $34.9125 per ounce.

Foreign Exchange

Foreign exchange rates on the Mexican peso and the Canadian dollar:

	Demand
Mexico (silver peso)	11.58c.
Canada (dollar) (a)	99 1/16c.

(a) Selling basis, N. Y.

Official London Prices

The following delivered quotations have been fixed by the British Ministry of Metals for the United Kingdom:

	Per Long Ton		
	£	s.	d.
COPPER:			
Electrolytic, high conductivity	227	0	0
Fire refined, high conductivity	227	0	0
Fire refined, high grade	226	10	0
Fire refined, min. 99.7 percent	226	0	0
Fire refined, min. 99.2 percent	225	10	0
LEAD:			
Soft, foreign duty paid	175	0	0
Soft, Empire	175	0	0
English, refined	176	10	0
ZINC:			
Foreign (G.o.b.) duty paid	190	0	0
Domestic (G.o.b.)	190	0	0
Prime Western and debased	190	0	0
Refined and electrolytic	194	0	0
Minimum 99.99 percent	196	0	0

Lead Average (Monterrey)

The net price realized by the American Smelting & Refining Co. on all of its sales of Mexican pig lead, including metal sold for consumption in Mexico, during the week ended Jan. 5, 1952, was 19.80c. (US) per pound, f.o.b. refinery, Monterrey, Mex.

DAILY PRICES OF METALS (*E & M J Quotations*)

Jan.	Electrolytic Copper: Domestic Refinery	Electrolytic Copper: Export Refinery	Straits Tin, New York	Lead: New York	Lead: St. Louis	Zinc: East St. Louis
10	24.200	27.425	103.000	19.000	18.800	19.500
11	24.200	27.425	103.000	19.000	18.800	19.500
12	No Market	27.425	103.000	19.000	18.800	19.500
14	24.200	27.425	103.000	19.000	18.800	19.500
15	24.200	27.425	103.000	19.000	18.800	19.500
16	24.200	27.425	103.000	19.000	18.800	19.500
Average	24.200	27.425	103.000	19.000	18.800	19.500

Average prices for calendar week ended Jan. 12 are: Domestic copper f.o.b. refinery, 24.200c.; export copper f.o.b. refinery 27.425c.; Straits tin, 103.000c.; New York lead, 19.000c.; St. Louis lead, 18.800c.; St. Louis zinc, 19.500c.; and silver, 88.000c.

The above quotations are our appraisal of the major United States markets, based on sales reported by producers and their agencies. They represent payments received by producers for the product. They are reduced to the basis of cash, New York or St. Louis, as noted. All prices are in cents per pound.

Copper, lead and zinc quotations are based on sales for both prompt and future deliveries; tin quotations are for prompt delivery only.

In the trade, domestic copper prices are quoted on a delivered basis; that is, delivered at consumers' plants. As delivery charges vary with the destination, the figures shown above are net prices at refineries on the Atlantic seaboard. Delivered prices in New England average 0.300c. per pound above refinery basis.

Our export quotation for copper reflects prices obtaining in the open market and is based on sales in the foreign market reduced to the f.o.b. refinery equivalent, Atlantic seaboard. On f.a.s. transactions we deduct 0.075c. for lighterage, etc., to arrive at the f.o.b. refinery quotation.

Quotations for copper are for ordinary forms of wirebars and ingot bars. Revised premiums on special shapes, effective in most instances on deliveries beginning Jan. 1, 1951, are: Standard ingots 0.125c. per pound; slabs, 0.375c. and up; cakes 0.425c., and up, depending on weight and dimensions; billets 1.35c. and up, depending on dimensions and quality. Discount on cathodes 0.125c. to 0.15c. per pound.

Quotations for zinc are for ordinary Prime Western brands. Premiums obtaining over Prime Western zinc in the East St. Louis market on the following grades, in cents per pound: Selected 0.10c.; Brass Special, 0.25c.; Intermediate, 0.5c. High Grade zinc sold on contract, delivered in the East and Middle West, commands a premium of 1.35c. per pound over the East St. Louis basis for Prime Western; on Special High Grade the premium or differential is 1.50c. per pound, effective Jan. 1, 1951.

Quotations for lead are for the common grade, and are based on sales of domestically refined metal sold to domestic consumers. The differential on sales in the Chicago district is 10 points under New York; for New England add 7½ points to the New York basis. Corroding grade commands a premium over common lead of 10 points.

Silver, Gold, and Sterling Exchange

Jan.	"Checks" Sterling Exchange	Silver: New York	Silver: London	Gold: London	Jan.	Sterling Exchange "Checks"	Silver: New York	Silver: London	Gold: London
10	$2.78	88.000	77d.	248s.	14	2.78	88.000	77d.	248s.
11	2.78	88.000	77d.	248s.	15	2.78	88.000	77d.	248s.
12	Not Quoted				16	2.78	88.000	77d.	248s.

Average silver, 88.000c.; Sterling Exchange, 278.000c.

The daily New York silver quotation reported by Handy & Harman is for silver contained in ores and other unrefined silver-bearing materials, in cents and fractions of a cent per troy ounce. It is determined by Handy & Harman on the basis of actual sales of bar silver .999 fine in amounts of 50,000 ounces or more for nearby delivery at New York as reported daily by regular suppliers, and is usually one-quarter cent below the price paid for such bar silver, this reduction being allowance to such suppliers for carrying, delivering, and marketing. In addition to foreign silver, the quotation also applies to domestic silver if such silver enters the New York market.

The Treasury's purchase price of newly mined domestic silver was established at 90.5c. per troy ounce, 1000 fine, effective on July 1, 1946 under an amendment to the Silver Purchase Act of July 6, 1939.

London silver quotations are in pence per troy ounce, basis .999 fine.

London gold quotations are per troy ounce, basis 1000 fine.

Sterling quotations represent the demand market in the forenoon. For premium on cables see Foreign Exchange.

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Non-Metallic Minerals

Prices received for non-metallic minerals vary widely and depend upon the physical and chemical characteristics of the commodity. Hence the following quotations can serve only as a general guide to the prices obtained by producrs and dealers in different parts of the United States for their own product. In the last analysis the value of a particular non-metallic mineral can be ascertained only by direct negotiations between buyers and sellers. Tons of 2,000 lb. unless otherwise noted.

ASBESTOS — Per short ton, f.o.b. mines Quebec, U.S. funds:

Crude No. 1, $960@$1,500; Crude No. 2, $595@$900; Spinning fibers, $275@$475; Shingle stock, $123@$170; Paper stock, $85@$119; Waste, $63@$70; Shorts, $30@$63.

Per ton, f.o.b. Hyde Park or Morrisville, Vt.:

Spinning fiber, $279.50@$302; shingle fiber, $135@$162; paper fiber, $81.50@$115; waste, stucco or plaster, $71.40; refuse or shorts, $34@$63.

BARYTES — F.o.b. mines.

Georgia: Barytes ore, crude, jig and lump, $13.00@$13.50 per long ton; beneficiated, $16@$18 per net ton, in paper bags.

Missouri: Per ton, water ground and floated, bleached, $37.60, carlots, f.o.b. works. Crude ore, minimum 94 percent $BaSO_4$, less than 1 percent iron $10.40; 93 percent $BaSO_4$, $10.15 f.o.b. mines.

FLUORSPAR—Metallurgical grade, effective CaF_2 content, per short ton, f.o.b. shipping point Illinois and Kentucky:

	Short Ton
70% effective CaF_2 content	$43.00
Less than 60%	$40@$41
Pellets, 60%	34.00

Acid grade concentrates, per short ton, bulk, carload lots (Effective Oct. 1, 1951):

F.o.b. Rosiclare, Ill., $60; Boulder, Colo., $60; Northgate, Colo., $60.

Acid grade concentrates, per short ton, bulk, carload lots, $65, f.o.b. Los Lunas, N. Mex.

Ceramic grade, min. 95% CaF_2, calcite and silica variable; Fe_2O_3 .14%, $45 per short ton, in bulk, f.o.b. Rosiclare. In 100-lb. bags $3.50 extra.

Foreign fluorspar, c.i.f. U.S. ports, duty paid, per short ton: Metallurgical grade, $38@$40; acid grade, nominal.

GRAPHITE—Per lb., carload lots, f.o.b. shipping point:

Crystalline flake, natural; 85-88% C, crucible grade, 13c.; 96% C, special and dry usage, 22c.; 94% C, normal and wire-drawing, 19c.; 96% C, special for brushes, etc., 25c.

Amorphus, natural, for foundry facings, etc., up to 85% C, 10c.

Madagascar, c.i.f. New York, "standard grades 85 to 87% C," $250 per ton; special mesh $300@$325; special grade 99% C, $725.

Amorphous graphite, Mexican, f.o.b. point of shipment (Mex.), per metric ton $9 to $16 depending on grade.

KYANITE — Per ton f.o.b. point of shipment, Va. and S. C., 35 mesh, carload lots, in bulk $29; in bags $32. For 200 mesh, in bags, carload lots, $40.

Imported kyanite, 57 to 59% grade, in bags, c.i.f. Atlantic ports $60@$65 per short ton.

MAGNESITE — Per ton, f.o.b. Chewelah, Wash., dead burned grain, in bulk $36.30; in bags $41.80.

PYRITES — Spanish 48% sulphur, c.i.f. U.S. ports, not quoted.

Domestic and Canadian pyrites, per long ton, nominal at $9@$11, f.o.b. point of shipment.

SULPHUR — Per long ton for domestic market, $22, f.o.b. Texas mines.

Nickel Consumption in U.S.

Consumption of nickel in the United States, exclusive of scrap, by uses, in pounds of nickel, according to the Bureau of Mines:

Use	Covered by Canvass (Percent of Total)	August Pounds	September Pounds	October Pounds
Ferrous:				
Stainless steels	99.5	3,786,009	3,607,819	4,121,783
Other steels	96.5	3,148,679	2,712,599	3,066,739
Cast irons	56.3	403,543	353,545	410,366
Nonferrous (a)	96.7	5,203,968	4,309,308	4,494,629
High temperature and electrical resistance alloys	96.1	1,304,024	1,219,330	1,292,781
Electroplating:				
Anodes	82.4	1,299,157	1,040,831	1,115,322
Solutions	—•	23,745	22,277	28,531
Catalysts	94.3	254,594	161,457	216,855
Ceramics	——	18,646	20,042	6,768
Magnets	100.0	123,893	106,701	110,024
Other	80.3	328,683	390,821	373,604
Totals	93.0	15,894,941	13,944,730	15,237,602

(a) Comprises copper-nickel alloys, nickel-silver, brass bronze, beryllium alloys, magnesium and aluminum alloys, Monel, Inconel, and malleable nickel.

Supplies of Manganese for U.S. Consumption

(Bureau of Mines)

Shipments of manganese ore from domestic mines recovered in October from the effects of the August-September work stoppages.

Imports of ore containing 35% or more manganese in October totaled 181,060 tons, the second highest monthly tonnage received in the 10-months' period of 1951. More than 30% originated in India; 19% in the Gold Coast; over 15% in Brazil; 14% in the Union of South Africa; 7% in Cuba; 6% in Mexico; and the remaining 8% in other countries. The latest statistics, in short tons, follow:

	Domestic Mine Shipments	General Imports Ore	General Imports Ferromanganese (a)	Exports Ore	Exports Ferromanganese (a)	Net Supply
1947	131,627	1,541,818	156,760	10,075	38,884	1,781,246
1948	131,100	1,456,597	195,360	9,236	39,175	1,534,646
1949	126,100	1,544,526	130,028	5,033	13,254	1,782,367
1950	139,000	1,837,950	221,684	8,962	1,160	2,188,512
1951:						
1st quarter	27,500	498,535	65,700	1,893	222	589,620
2nd quarter	29,300	423,305	65,100	1,857	86	515,762
July	9,500	90,325	22,500	1,076	40	121,209
August	6,300	161,936	19,300	793	200	186,543
September	6,300	149,926	13,800	740	40	169,246
October	9,200	181,060	19,500	849	325	208,586

(a) In terms of ore.

New Titanium Process

A patent application has been filed on a new process that is expected to lower the cost of producing titanium metal, possibly to less than $2 per lb. The process, developed on a laboratory scale by Dr. Arthur J. Kerbecek Jr. during research for his Ph. D. at Columbia University, will be withheld for two years, as are most scientific theses at Columbia.

The process starts with anhydrous titanium tetrachloride and reduces this electrolytically to titanium metal. The resultant product is a sponge, somewhat similar to the Kroll sponge, which must be melted down in an arc or sintered. The basic attributes of the process are continuity of operation, low operating temperature, and direct recovery of chlorine in the cell. It eliminates the need for magnesium or setting up a plant to electrolyze magnesium chloride.

An undisclosed company is at work to develop the process commercially.

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Secondary Aluminum

Ceiling delivered prices of secondary aluminum ingot, per pound, in lots of 10,000 lb. or more, effective June 29, 1951:

Piston alloy, 20½c.; No. 12 alloy, 19½c.; No. 13 alloy, max. .30 copper, 21c.

Deoxidizing grade: No. 1, 18c.; No. 2, 17½c.; No. 3, 17½c.; No. 4, 16½c.

Tri-State Concentrates

Joplin, Mo., Jan. 12, 1952

	Per Ton
Blende	
Prime coarse (jig and table 60% zinc)	$135.00
Flotation, 60% zinc	$135.00
Galena	
Coarse and flotation, 80% lead	$245.95

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Smelters' Copper Scrap Prices

Custom smelters' buying prices for scrap, carload lots, refinery:

No. 1 heavy copper and wire, 19½c.; No. 2 heavy copper and wire, 17½c.; Light copper, 16½c.; refinery brass, 17½c.

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Brass and Bronze Ingot

85-5-5-5 (No. 115) 27½c.; 80-10-10 (No. 305) 32½c.; 88-10-2 (No. 215) 38½c. Yellow, 23½c. and upward.

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Dealers' Scrap Prices

Dealers' buying prices, f.o.b. New York or equivalent freight points, for wholesale quantities, in cents per lb.

No. 1 copper wire	18½@19½
Heavy copper & wire, mixed	17½@17¾
Light copper	16@16½
No. 1 composition	18½@18½
Composition turnings	17½@17¾
Cocks and faucets	16½@16½
Light brass	9½@10
Yellow brass turnings, mix	13½@14
Heavy yellow brass, mixed	13½@14½
Auto radiators, unsweated	14½@15
Brass pipe, cut	16@16½
Rod brass turnings, No. 1	15@15½
Rod ends, brass	15½@16
New soft brass clips	17½@18
Cast aluminum, mixed	7½@8
Aluminum pistons, clean	7½@8
Aluminum crankcases	7½@8
Aluminum clips, new soft	10½
Sheet aluminum, old clean	8
Duraluimin clips, new	8
Aluminum turnings, clean	5
Zinc die cast, mixed	6½@7
Zinc die cast, new	8½@9½
Old zinc	10@10½
New zinc clips	13½@13½
Soft or hard lead	15½@16
Battery plates	10½@11
Babbitt mixed	16@16½
Lintoype or stereotype	17½@18
Electrotype	16@16½
Solder joints close cut	20@22
Block tin pipe	90@92
No. 1 pewter	65@68
Autobearing babbitt	50@53
Monel clips, new	28@30
Monel sheet, clean	28@30
Monel turnings	25@27
Nickel clips, new	35@38
Nickel anodes, cast	35@38

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